Amendments to the specification:

Substitute the following paragraph for the first full paragraph of page 7 starting with "Regarding LNAPL,"

Regarding LNAPL, the depth of any floating LNAPL is determined by measuring the resistance of the hydrostatic circuit 7 from the top of the well casing. Note that the LNAPL resistance measuring terminal 21 is connected to the top of the resistance network 9 of the hydrostatic circuit 7. ~~hydrostatic resistance network 7.~~ If the measured resistance of the hydrostatic circuit 7 is equal to the measured resistance of the water detecting conductive circuit 2 when the two signals are compared, then no LNAPL is present. If the measured resistance of the hydrostatic circuit is less than the measured resistance of the conductive circuit when the two signals are compared, then a LNAPL is present and this measured resistance represent the depth of the LNAPL. The thickness of the LNAPL can then be determined by subtracting the measured resistance of the hydrostatic circuit from the measured resistance of the conductive circuit. The volume of LNAPL in the well is calculated using the measured thickness or height of the LNAPL and the inside diameter of the well casing.

Replace the section starting with the page 8 paragraph "To provide further clarification..." and ending with the paragraph on page 10 ending with "0.03 feet" with

To provide further clarification, the following examples are provided which employ a single hypothetical 0.10 foot tape section positioned in a hypothetical "well" having a depth of 0.10 foot. Of course, for a real well, much longer and numerous tape sections are coupled together in tandem as mentioned previously. More specifically, the depth of water in the well is determined by measuring the effective resistance of the conductive circuit ~~10~~ 2 as shown in figure 1. ~~Figure 1.~~ In the example shown in figure 2, ~~Figure 1a,~~ the water level in the well is at the level of the contacts at transistor Q3. The water bridges the contacts and current is allowed to flow to transistor Q3 and the transistor behaves like a closed grounding switch from the collector to the emitter. Therefore, the resistance measured from the top of the well to the resulting ground is 20-ohms, which is the sum of the two 10-ohm resistors (R1 + R2). This corresponds to a depth to water of 0.02 feet (10-ohms per 0.01-feet). The thickness or height of the water column in the

well can then be determined by subtracting the measured resistance of the conductive circuit (depth to water) from the measured resistance of the total depth of 0.10 foot, of the hypothetical well. Since the contacts are spaced at 0.01-foot intervals, in this example the well is only 0.10 feet deep. The thickness of the water column is equal to:

0.10 feet – 0.02 feet = 0.08 feet.

The volume of water in the well is calculated using the measured thickness of the water and the inside diameter of the well casing (i.e. pi x radius squared x height, the volume of a cylinder).

The depth of any DNAPL in the well is determined by measuring the resistance of the conductive circuit from ~~the bottom of~~ the bottom of the well casing as shown in figure 3.~~Figure 3.~~ Note that dense liquids settle to the bottom. Note that DNAPL terminal 18 is connected to the bottom of resistance network 10 of conductive circuit 2. In the example shown in figure 3, ~~Figure 2,~~ the water / DNAPL interface in the well is at the level of the contacts at transistor Q7. The water bridges the contacts and current is allowed to flow to transistor Q7 and the transistor behaves like a closed switch from the collector to the emitter. Transistors Q8, Q9, and Q10 behave like open switches since DNAPLs are non conductive liquids and current is not allow to flow to the base of these transistors. Therefore, the resistance measured from the bottom of the well to ground, established by the presence of water at transistor Q7, is 40-ohms which is the sum of the four 10-ohm resistors (R7+R8+R9+R10). This measured resistance from DNAPL terminal 18 to ground corresponds to the thickness of the DNAPL 0.04 feet (10-ohms per 0.01-feet). The depth of DNAPL is determined by subtracting the DNAPL thickness from the measured resistance of the total depth of the well as follows:

0.10 feet – 0.04 feet = 0.06 feet.

The volume of DNAPL in the well is calculated using the measured thickness of the DNAPL and the inside diameter of the well casing.

The depth to any LNAPL is determined by measuring the resistance of the hydrostatic from the top of the well casing as shown in Figure 4. Note that light liquids rise to the top of the water column. If the measured resistance of

the hydrostatic circuit 7 is equal to the measured resistance of the conductive circuit 2, then no LNAPL is present, as shown in Figure 2. As shown in Figure ~~3~~ 4, if the measured resistance of the hydrostatic circuit (20-ohms) is less than the measured resistance of the conductive circuit (then a LNAPL is present in the well). The measured resistance represents the depth of the LNAPL and is equal to 0.02 feet (10-ohms per 0.01-feet). The thickness of the LNAPL can then be determined by subtracting the measured resistance of the hydrostatic circuit from the measured resistance of the conductive circuit as follows:

0.05 feet – 0.02 feet = 0.03 feet.